

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Jeffrey A. Colborn

Application No.: **Unassigned**

Filed: **August 15, 2001**

For: **METAL FUEL CELL SYSTEM FOR
PROVIDING BACK-UP POWER TO
ONE OR MORE LOADS**

Art Unit: Unassigned

Examiner: Unassigned



PETITION TO MAKE SPECIAL

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

INTRODUCTION

This is a Petition to Make Special the above-identified patent application under 37 C.F.R. §1.102(c). This Petition is based on the Declaration of Jeffrey A. Colborn, the authorized representative of the Assignee, attached hereto as Exhibit A, the petitions to make special and corresponding decisions thereon for Assignee's related applications, attached hereto as Exhibit B, and the grounds set forth in 37 C.F.R. §1.102(c) and MPEP 708.02 V. and VI(B).

The Petition should be granted, and the application accorded special status, for three distinct reasons. First, as set forth in the Declaration, the application meets the criteria of MPEP 708.02 V. Second, as also set forth in the Declaration, the application meets the criteria of MPEP 708.02 VI(B). Third, a decision according the application special status is supported by the numerous decisions on petitions according special status to all of the related applications of the Assignee. These points are explained further as follows:

I. THE APPLICATION MEETS THE CRITERIA OF MPEP 708.02 V

As set forth in the attached Declaration, the application meets the criteria of MPEP 708.02 V for at least the following reasons:

1. By replacing polluting diesel generators as back-up power sources for buildings, the refuelable and/or regenerative fuel cell system of the invention is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air.

(Decla. ¶2).

2. By replacing diesel generators, the refuelable and/or regenerative fuel cell system is also expected to eliminate the need for lubricating oil for diesel generators, and therefore materially enhance the quality of the environment by contributing to the restoration and maintenance of water. (Decla. ¶3).

3. By replacing lead/acid batteries, the refuelable and/or regenerative fuel cell system is also expected to materially enhance the quality of the environment by reducing the damage to the earth caused by the mining of lead, thereby contributing to the restoration and maintenance of the soil. (Decla. ¶4).

4. By enabling solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses, the refuelable and/or regenerative fuel cell system is expected to materially enhance the quality of the environment by contributing to the restoration or maintenance of the air. (Decla. ¶¶5-6).

5. By increasing the efficiency of the power grid, the refuelable and/or regenerative fuel cell system is expected to result in introduction of less pollutants into the air since less fossil fuel needs to be burned to provide the same power output. Consequently, the system is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air. (Decla. ¶¶7-10).

II. THE APPLICATION MEETS THE CRITERIA OF MPEP 708.02 VI(B)

A second independent basis for according the application special status is that it meets the criteria of MPEP 708.02 VI(B). As set forth in the attached Declaration, the application meets these criteria for at least the following reasons:

1. The invention relates to a refuelable and/or regenerative fuel cell system in which a refuelable and/or regenerative fuel cell is interfaced to the power grid and to an energy controller in a home or business which controls one or more loads, e.g., elevators, lights, air conditioners, household appliances such as refrigerators, etc. During off-peak hours, when energy from the power grid is cheapest, the system may draw energy from the power grid in order to reprocess spent reaction solution and reaction products into metal fuel and fresh reaction solution. In addition, whenever energy is needed to drive the loads, the energy controller selectively draws energy from the refuelable and/or regenerative fuel cell to drive the one or more loads in an energy efficient manner. For example, the controller can automatically turn off lights and air conditioners during off-business hours and power them up again during business hours. The ability of the system to store energy in the form of the fuel allows the two processes—the process of reprocessing spent reaction products and the process of driving one or more loads—to be decoupled from one another, i.e., performed substantially independently of one another. (Decla. ¶7).

2. The system is expected to increase the efficiency of the power grid in terms of wattage out divided by quantity of fossil fuel burned. The reason is that the system, because of its capability to store energy in the form of electrochemical fuel, and to decouple the processes of reprocessing spent reaction products and driving loads, is expected to result in more frequent use of base load power plants and less frequent use of peaking plants to drive the power grid. Since base load plants are more efficient than peaking plants, e.g., 60 % vs. 35 %, the result is an overall increase in the efficiency of the power grid. (Decla. ¶8).

3. To explain why this is so, consider a scenario such as a hot day where the demand exceeds the supply for power from base load power plants. Currently, the response to this scenario will be to power up the less efficient peaking plants to fill the gap between demand and supply. However, with the refuelable and/or regenerative fuel cell system, the response to this scenario is expected to be the use of the refuelable and/or regenerative fuel cell to fill the gap between demand and supply. (Decla. ¶9).

4. The increased efficiency of the power grid means that the refuelable and/or regenerative fuel cell system is expected to materially contribute to the reduction of energy consumption in combustion systems, industrial equipment, household appliances, etc. (Decla. ¶11).

III. A DECISION ACCORDING THE APPLICATION SPECIAL STATUS IS SUPPORTED BY THE NUMEROUS DECISIONS ACCORDING SPECIAL STATUS TO ASSIGNEE'S RELATED APPLICATIONS

A decision according the application special status is also supported by the decisions according special status to all of Assignee's related applications. These related applications consist of U.S.S.N. 09/353,422 (now U.S. Patent No. 6,162,555); 09/449,176 (now U.S. Patent No. 6,153,328); 09/521,392; 09/573,438; and 09/627,742. The petitions and the decisions on the petitions for these related applications are attached hereto as Exhibit B.

CONCLUSION

For all the foregoing reasons, this Petition is proper in all respects, and should be granted.

There is no Petition fee required pursuant to 37 C.F.R. §1.102(c) and/or MPEP §708.02, and therefore no payment is enclosed herewith. However, if a fee is in fact due, the Commissioner is authorized to charge the same to our Deposit Account No. **08-3038**, referencing Docket No. 04813.0018.NPUS00.

HOWREY SIMON ARNOLD & WHITE, LLP

Date: August 15, 2001



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EXHIBIT A

In re the application of:

Jeffrey A. Colborn

Application No.: **Unassigned**

Filed: **August 15, 2001**

For: **METAL FUEL CELL SYSTEM FOR
PROVIDING BACK-UP POWER TO
ONE OR MORE LOADS**

Art Unit: Unassigned

Examiner: Unassigned



**DECLARATION OF ASSIGNEE IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)**

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

1. I, Jeffrey A. Colborn, am Chairman and Chief Executive Officer of Metallic Power, Inc., the assignee of the above-captioned patent application. In my capacity as Chairman/CEO of Metallic Power, I believe that the invention claimed in the above-captioned patent application will (a) materially enhance the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and (b) materially contribute to more efficient utilization and conservation of energy resources. The basis for my belief is as follows:

2. The invention relates to a refuelable and/or regenerative fuel cell, which can replace diesel generators as back-up power sources for buildings when used as a back-up power device as described in the invention. Diesel generators generate a substantial amount of air pollution. This has motivated some cities, for example in California, to impose a moratorium on permits for diesel generators as back-up power sources for buildings. This is particularly

remarkable given that California in general, and the Bay Area in particular, is experiencing rolling blackouts. Obviously, these cities are greatly concerned that the risk to the environment posed by a large number of these diesel generators coming on line at the same time, such as could occur if an area was subject to a rolling blackout, is serious and substantial. Given the serious disruption to a city caused by a rolling blackout, and the lack of other alternatives that are as attractive as refuelable and/or regenerative fuel cells in terms of cost, efficiency and environmental impact, it stands to reason then that these cities would be highly motivated to deploy refuelable and/or regenerative fuel cells as back-up power sources in lieu of diesel generators. By replacing polluting diesel generators, the refuelable and/or regenerative fuel cell is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air.

3. Diesel generators also consume quite a bit of lubricating oil given that they must have their oil changed quite often. The disposal of this oil can be extremely harmful to the environment as one quart of motor oil can render an entire reservoir unpalatable for drinking. By replacing diesel generators, the refuelable and/or regenerative fuel cell is also expected to eliminate the need for this oil, and therefore materially enhance the quality of the environment by contributing to the restoration and maintenance of water.

4. The refuelable and/or regenerative fuel cell is also expected to replace lead/acid batteries as a power source because of the significant environmental damage caused by the manufacture of lead/acid batteries, damage caused particularly by the mining, processing and recycling of lead, and the lack of any other alternatives as attractive as refuelable and/or regenerative fuel cells. By replacing lead/acid batteries, the refuelable and/or regenerative fuel cell is also expected to materially enhance the quality of the environment by reducing the damage to the earth caused by the mining of lead, and contributing to the restoration and maintenance of the soil.

5. The refuelable and/or regenerative fuel cell will also enable solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses. The reason is that refuelable and/or regenerative fuel cells allow for the storage of energy in the form of metal fuel and fresh reaction solution or hydrogen, depending on the type of refuelable and/or regenerative fuel cell. These fuels can be reprocessed from spent reaction products whenever the solar or wind power is available. Later, when power is needed for a house or business, this power can be provided by the refuelable and/or regenerative fuel cell replenished by the reprocessed fuel and fresh reaction solution. Once enabled, solar/wind power is expected to replace power plants as the primary energy source for a substantial number of homes and businesses because it does not release pollutants into the air, is more efficient and less costly.

6. Power plants function by converting energy released through the burning of fossil fuels into power. The burning of fossil fuels in turn releases a substantial amount of pollutants into the air. By enabling solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses, the refuelable and/or regenerative fuel cell is expected to materially enhance the quality of the environment by contributing to the restoration or maintenance of the air.

7. The invention also relates to a refuelable and/or regenerative fuel cell system in which a refuelable and/or regenerative fuel cell is interfaced to the power grid and to an energy controller in a home or business which controls one or more loads, e.g., elevators, lights, air conditioners, household appliances such as refrigerators, etc. During off-peak hours, when energy from the power grid is cheapest, the system may draw energy from the power grid in order to reprocess spent reaction solution and reaction products into metal fuel and fresh reaction solution. In addition, whenever energy is needed to drive the loads, the energy controller selectively draws energy from the refuelable and/or regenerative fuel cell to drive the one or more loads in an energy efficient manner. For example, the controller can automatically turn off lights and air conditioners during off-business hours and power them up again during business hours.

The ability of the system to store energy in the form of the fuel allows the two processes –the process of reprocessing spent reaction products and the process of driving one or more loads--to be decoupled from one another, i.e., performed substantially independently of one another.

8. The system is expected to increase the efficiency of the power grid in terms of wattage out divided by quantity of fossil fuel burned. The reason is that the system, because of its capability to store energy in the form of electrochemical fuel, and to decouple the processes of reprocessing spent reaction products and driving loads, is expected to result in more frequent use of base load power plants and less frequent use of peaking plants to drive the power grid. Since base load plants are more efficient than peaking plants, e.g., 60 % vs. 35 %, the result is an overall increase in the efficiency of the power grid.

9. To explain why this is so, consider a scenario such as a hot day where the demand exceeds the supply for power from base load power plants. Currently, the response to this scenario will be to power up the less efficient peaking plants to fill the gap between demand and supply. However, with the refuelable and/or regenerative fuel cell system, the response to this scenario is expected to be the use of the refuelable and/or regenerative fuel cell to fill the gap between demand and supply.

10. The increased efficiency of the power grid resulting from use of the system is expected to translate into the introduction of less pollutants into the air since less fossil fuel needs to be burned to provide the same power output. Consequently, the system is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air.

11. The increased efficiency of the power grid also means that the refuelable and/or regenerative fuel cell system is expected to materially contribute to the reduction of energy consumption in combustion systems, industrial equipment, household appliances, etc.

12. All statements made on the basis of personal knowledge are true, and all statements made on the basis of information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 15th, 2001



Jeffrey A. Colborn, Chairman/CEO
Metallic Power, Inc.

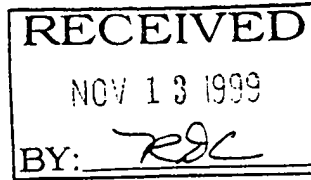
EXHIBIT B



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

04813.0006.00 USA



MAILED: 11/13/99

Page No.: 4
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In re application of
Bernardo A. Gutierrez et al

Serial No.: 09/353,422
Filed: July 15, 1999
For: PARTICLE FEEDING APPARATUS
FOR ELECTROCHEMICAL POWER
SOURCE AND METHOD OF MAKING
SAME

DECISION ON PETITION
TO MAKE SPECIAL
UNDER M.P.E.P. 708.02 V

This is a decision on the petition filed on July 15, 1999, requesting that the above identified application be granted Special Status under Sections 37 C.F.R. 1.102 and M.P.E.P 708.02 V.

The petition has been considered and found to comply with the requirements set forth under the above noted section.

The petition is GRANTED.

Richard V. Fisher
Director, Technology Center 1700
Chemical and Materials Engineering

Richard D. Clarke
P.O. Box 1666
Spring Valley, CA 91979-1666

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Gutierrez et al.)	Art Unit:	--
)		
Serial No.:	--)	Attorney	
)	Docket No.:	99-MPL/102
Filed:	filed herewith)		
)		
Title:	PARTICLE FEEDING)		
	APPARATUS FOR)		
	ELECTROCHEMICAL)		
	POWER SOURCE AND)		
	METHOD OF MAKING)		
	SAME)		

jc857 U.S. PTO
09/930394
08/15/01

PETITION TO MAKE SPECIAL UNDER 37 CFR §102(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This is a Petition to Make Special the above-identified patent application under 37 CFR §102(c). The grounds and conditions for granting this application special status are found in MPEP §708.02 V. entitled "ENVIRONMENTAL QUALITY."

CERTIFICATE OF MAILING UNDER 37 CFR §1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First-Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on July 15, 1999 :

Date: 7/15/99

Signed: Richard D. Clarke
Richard D. Clarke

There is no Petition fee required pursuant to 37 CFR §102(c) and/or TMEP §708.02, and therefore no payment is enclosed herewith.

As provided for in MPEP §708.02 V., Applicant believes that the invention which is the subject of the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air water and soil. In support of this Petition, Applicant submits the Declarations of Jeffrey A. Colborn, Bernardo A. Gutierrez and the patent practitioner of record for this patent application, Richard D. Clarke referring to:

(A) How and why the use of less fossil fuels contributes to and positively influences the quality of the earth's environment;

(B) The potential contribution to the well-being of the environment, the maintenance of the natural elements and the prevention of further damage to these life-sustaining elements, namely, the earth's air, water and soil, connected to the present invention;

(C) The projected relative figures of fossil fuel savings, in particular oil, and how using less oil for a given application and extending the useful life of a unit volume of oil in use in an industrial machine lubrication setting or for the lubrication of an internal combustion engine, enhances the preservation and restoration of the earth's environment; and

(D) Why and how the Particle Feeding Apparatus for Electrochemical Power Source which is the subject of the instant patent application substantially decreases requirements for larger volumes of oil production and usage and why this materially enhances the quality of the environment.

Accordingly, Applicant requests that this Petition to Make Special be granted and that the application undergo accelerated examination.

Dated: July 15, 1999

Respectfully submitted,

THE LAW OFFICE OF RICHARD D. CLARKE

By: Richard D. Clarke

Richard D. Clarke
Attorney for Applicant
Registration No. 38,846

Richard D. Clarke
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gutierrez et al.) Art Unit: --
Serial No.: --) Attorney
Filed: filed herewith) Docket No.: 99-MPL/102
Title: PARTICLE FEEDING APPARATUS)
FOR ELECTROCHEMICAL)
POWER SOURCE AND METHOD)
OF MAKING SAME)



DECLARATION IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 CFR §102(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, **Bernardo A. Gutierrez**, named co-inventor, the undersigned, and the Assignee in the above-captioned patent application, filed herewith, declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief, the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil would have to be taken from the earth,

well-known fact that even with the advances in refining technologies and increasing awareness and sensitivity to environmental needs, oil refineries continuously contaminate the earth's environment, namely air, water and soil. The massive expenditure of resources to clean up such refinery sites such as the one in Martinez, California are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. The amount of pollution damage that is done to the earth's natural resources is directly related to the amount of fossil fuels requiring processing for use in such applications as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska. Over ten years later the long term effects of the worst environmental disaster in the history of the United States is still being felt. Most of the species which were devastated due to the spillage of toxic petroleum products in a fragile environment have still not recovered and the once pristine beaches on the Alaskan coastline are still fouled with petroleum sludge. It still remains to be seen if the ecosystem and the local economy there will ever be able to fully recover from such a disaster.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum

products and the burning of fossil fuels in internal combustion engines. The resulting emissions from even the most technologically advanced internal combustion engines contribute to air pollution, acid rain and the subsequent degradation of soil and water quality.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting either directly or indirectly from the use of internal combustion engines, most states are requiring more stringent requirements for air emissions from automobiles and California has gone so far as to mandate that fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine for powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a new and improved particle feeding apparatus for electrochemical power source which would allow vehicles to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore, while employing this device, rather than routinely refueling with petroleum products, the battery

used to power vehicles or industrial machinery, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine.

7. Finally, the bottom line is that this device greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Applicant respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: July 14th, 1999

Bernardo A. Gutierrez

Bernardo A. Gutierrez, co-inventor
Metallic Power, Inc.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gutierrez et al.) Art Unit: --
Serial No.: --) Attorney
Docket No.: 99-MPI/102
Filed: filed herewith)
Title: PARTICLE FEEDING APPARATUS)
FOR ELECTROCHEMICAL)
POWER SOURCE AND METHOD)
OF MAKING SAME)

jc857 U.S. PTO
09/930394
08/15/01

**DECLARATION IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 CFR §102(c)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Jeffrey A. Colborn, President and CEO of Metallic Power, Inc., a Delaware corporation, the undersigned, and the Assignee in the above-captioned patent application, filed herewith, declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief, the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil would have to be taken from the earth,

transported, refined and subsequently disposed of in an environmentally conscious manner. It is a well-known fact that even with the advances in refining technologies and increasing awareness and sensitivity to environmental needs, oil refineries continuously contaminate the earth's environment, namely air, water and soil. The massive expenditure of resources to clean up such refinery sites such as the one in Martinez, California are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. The amount of pollution damage that is done to the earth's natural resources is directly related to the amount of fossil fuels requiring processing for use in such applications as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska. Over ten years later the long term effects of the worst environmental disaster in the history of the United States is still being felt. Most of the species which were devastated due to the spillage of toxic petroleum products in a fragile environment have still not recovered and the once pristine beaches on the Alaskan coastline are still fouled with petroleum sludge. It still remains to be seen if the ecosystem and the local economy there will ever be able to fully recover from such a disaster.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum products and the burning of fossil fuels in internal combustion engines. The resulting emissions from even the most technologically advanced internal combustion engines contribute to air pollution, acid rain and the subsequent degradation of soil and water quality.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting either directly or indirectly from the use of internal combustion engines, most states are requiring more stringent requirements for air emissions from automobiles and California has gone so far as to mandate that fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine for powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a new and improved particle feeding apparatus for electrochemical power source which would allow vehicles to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore,

while employing this device, rather than routinely refueling with petroleum products, the battery used to power vehicles or industrial machinery, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine.

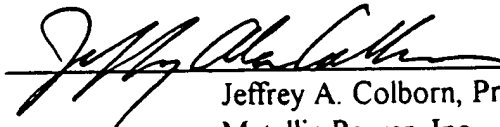
7. Finally, the bottom line is that this device greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Applicant respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:

July 14, 1999



Jeffrey A. Colborn, President and CEO
Metallic Power, Inc.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gutierrez et al.)	Art Unit: --
)	
Serial No.: N/A)	Attorney
)	Docket No.: 99-MPI/102
Filed: filed herewith)	
)	
Title: PARTICLE FEEDING APPARATUS)	
FOR ELECTROCHEMICAL)	
POWER SOURCE AND METHOD)	
OF MAKING SAME)	

jc857 U.S. PTO
09/930394
08/15/01

DECLARATION IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 CFR §102(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, **Richard D. Clarke**, attorney of record and the undersigned in the above-captioned patent application, filed herewith, declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief, the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil would have to be taken from the earth, transported, refined and subsequently disposed of in an environmentally conscious manner. It is

well-known fact that even with the advances in refining technologies and increasing awareness and sensitivity to environmental needs, oil refineries continuously contaminate the earth's environment, namely air, water and soil. The massive expenditure of resources to clean up such refinery sites such as the one in Martinez, California are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. The amount of pollution damage that is done to the earth's natural resources is directly related to the amount of fossil fuels requiring processing for use in such applications as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska. Over ten years later the long term effects of the worst environmental disaster in the history of the United States is still being felt. Most of the species which were devastated due to the spillage of toxic petroleum products in a fragile environment have still not recovered and the once pristine beaches on the Alaskan coastline are still fouled with petroleum sludge. It still remains to be seen if the ecosystem and the local economy there will ever be able to fully recover from such a disaster.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum

products and the burning of fossil fuels in internal combustion engines. The resulting emissions from even the most technologically advanced internal combustion engines contribute to air pollution, acid rain and the subsequent degradation of soil and water quality.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting either directly or indirectly from the use of internal combustion engines, most states are requiring more stringent requirements for air emissions from automobiles and California has gone so far as to mandate that fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine for powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a new and improved particle feeding apparatus for electrochemical power source which would allow vehicles to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore, while employing this device, rather than routinely refueling with petroleum products, the battery


used to power vehicles or industrial machinery, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine.

7. Finally, the bottom line is that this device greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Applicant respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 7/15/99


Richard D. Clarke, Esq.
Patent Attorney of Record
USPTO Reg. No. 38,846



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
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HOWREY SIMON ARNOLD & WHITE

04813.0004.000500

JUL 13 2000

JUL 14 2000

WASHINGTON, D.C.

In re Application of
Jeffrey A. Colborn
Serial Number: 09/449,176
Filed: November 24, 1999
For: SYSTEM AND METHOD FOR PREVENTING
THE FORMATION OF DENDRITES IN A
METAL/AIR FUEL CELL, BATTERY OR METAL
RECOVERY APPARATUS

DECISION
ON
PETITION

jc857 U.S. PTO
09/930394
08/15/01

This is in response to the petition filed November 24, 1999, requesting that the above-identified application be granted Special Status under Section 708.02 (V) of the MPEP.

The petition has been considered and found to comply with the requirements set forth under the above-noted section. Accordingly the petition is granted.

Richard V. Fisher, Director
Technology Center 1700
Chemical and Materials Engineering

Robert C. Laurenson
Howrey, Simon, Arnold & White, LLP
Box No. 34
1299 Pennsylvania Avenue, NW
Washington, DC 20004-2402

DOCKETED qdc 7.14.00

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Jeffrey A. Colborn

Serial No.: To be assigned

Filed: concurrently herewith

For: SYSTEM AND METHOD FOR
PREVENTING THE FORMATION OF
DENDRITES IN A METAL/AIR FUEL
CELL, BATTERY OR METAL
RECOVERY APPARATUS

Group Art Unit: To be assigned

Examiner: To be assigned

10857 U.S. PTO
09/930394
08/15/01

DECLARATION IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 CFR §1.102(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Jeffrey A. Colborn, President and CEO of Metallic Power, Inc., a Delaware corporation, the undersigned, and the Assignee in the above-captioned patent application, filed herewith, declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief, the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil would have to be taken from the earth, transported, refined and subsequently disposed of in an environmentally conscious manner. It is a well-known fact that even with the advances in refining technologies and increasing awareness

and sensitivity to environmental needs, oil refineries continuously contaminate the earth's environment, namely air, water and soil. The massive expenditure of resources to clean up such refinery sites such as the one in Martinez, California are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. The amount of pollution damage that is done to the earth's natural resources is directly related to the amount of fossil fuels requiring processing for use in such applications as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska. Over ten years later the long term effects of the worst environmental disaster in the history of the United States is still being felt. Most of the species which were devastated due to the spillage of toxic petroleum products in a fragile environment have still not recovered and the once pristine beaches on the Alaskan coastline are still fouled with petroleum sludge. It still remains to be seen if the ecosystem and the local economy there will ever be able to fully recover from such a disaster.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum products and the burning of fossil fuels in internal combustion engines. The resulting emissions

from even the most technologically advanced internal combustion engines contribute to air pollution, acid rain and the subsequent degradation of soil and water quality.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting either directly or indirectly from the use of internal combustion engines, most states are requiring more stringent requirements for air emissions from automobiles and California has gone so far as to mandate that fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine for powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a system and method for eliminating short circuits caused by the production of dendrites in a fuel cell, battery or metal recovery apparatus (hereinafter "electrochemical power source or recovery apparatus"). The electrochemical power source or recovery apparatus associated with the present invention allows, for example, vehicles to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore, while employing this device, rather than routinely refueling with petroleum products, the battery used to power vehicles or industrial

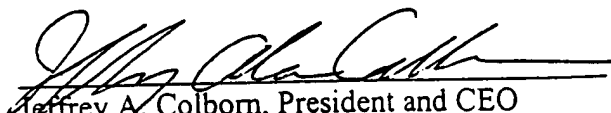
machinery, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine.

7. Finally, the bottom line is that the electrochemical power source or recovery apparatus associated with the present invention greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Applicant respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Nov. 23, 1999


Jeffrey A. Colborn, President and CEO
Metallic Power, Inc.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
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HOWREY SIMON ARNOLD & WHITE

JUL 20 2000

JUL 21 2000

94813.0005.00
USD0

In re Application of WASHINGTON, D.C. :
Martin Pinto et al :
Serial Number: 09/521,392 :
Filed: March 8, 2000 :
For: REFUELABLE ELECTROCHEMICAL POWER :
SOURCE CAPABLE OF BEING MAINTAINED :
IN A SUBSTANTIALLY CONSTANT FULL :
CONDITION AND METHOD OF USING THE :
SAME :

DECISION
ON
PETITION

jc857 U.S. PTO
09/930394
08/15/01

This is in response to the petition filed March 8, 2000, requesting that the above-identified application be granted Special Status under Section 708.02 (V) of the MPEP.

The petition has been considered and found to comply with the requirements set forth under the above-noted section. Accordingly the petition is granted.

Richard V. Fisher

Richard V. Fisher, Director
Technology Center 1700
Chemical and Materials Engineering

Robert C. Laurenson
Howrey, Simon Arnold & White, LLP
Box No. 34
1299 Pennsylvania Avenue, N.W.
Washington, DC 20004-2402

DOCKETED gdc 7.21.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Martin Pinto, et al.

Application No.:

Filed: Herewith

For: **REFUELABLE ELECTROCHEMICAL
POWER SOURCE CAPABLE OF
BEING MAINTAINED IN A
SUBSTANTIALLY CONSTANT FULL
CONDITION AND METHOD OF
USING THE SAME**

Art Unit:

Examiner:

Attorney Docket: 04813.0005.US00



PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This is a Petition to Make Special the above-identified patent application under 37 C.F.R. §1.102(c). The grounds and condition for granting this application special status are found in MPEP §702.02 V. entitled " ENVIRONMENTAL QUALITY," and 37 C.F.R. §1.102(c).

There is no Petition fee required pursuant to 37 C.F.R. §1.102(c) and/or MPEP §708.02, and therefore no payment is enclosed herewith.

As provided for in MPEP §708.02 V., Applicant believes that the invention, which is the subject of the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil. In support of this Petition, Applicant submits the Declaration of Jeffrey A. Colborn, the authorized representative of the Assignee of the subject application, referring to:

(A) How and why the use of less fossil fuels contributes to and positively influences the quality of the earth's environment;

(B) The potential contribution to the well-being of the environment, the maintenance of the natural elements and the prevention of further damage to these life-sustaining elements, namely, the earth's air, water and soil, connected to the present invention;

(C) The projected relative figures of fossil fuel savings, in particular oil, and how using less oil for a given application and extending the useful life of a unit volume of oil in use in an industrial machine lubrication setting or for the lubrication of an internal combustion engine, enhances the preservation and restoration of the earth's environment; and

(D) Why and how the Refuelable Electrochemical Power Source which is the subject of the instant patent application substantially decreases requirements for larger volumes of oil production and usage and why this materially enhances the quality of the environment.

Accordingly, Applicant requests that this Petition to Make Special be granted and that the application undergo accelerated examination.

HOWREY SIMON ARNOLD & WHITE, LLP

Date March 8, 2000



Robert C. Laurenson (Reg. No. 34,206)

HOWREY SIMON ARNOLD & WHITE, LLP
Box No. 34
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402
Fax No. (202) 624-8925
(858) 657-9777

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Martin Pinto, et al.

Application No.:

Filed: Herewith

For: **REFUELABLE ELECTROCHEMICAL
POWER SOURCE CAPABLE OF
BEING MAINTAINED IN A
SUBSTANTIALLY CONSTANT FULL
CONDITION AND METHOD OF
USING THE SAME**

Art Unit:

Examiner:

Attorney Docket: 04813.0005.US00



**DECLARATION OF ASSIGNEE IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Jeffrey A. Colborn, am President and CEO of Metallic Power, Inc., the Assignee of the above-captioned patent application. In my capacity as President/CEO of Metallic Power, I declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil would have to be taken from the earth, transported, refined and subsequently disposed of in an environmentally conscious manner.

It is a well-known fact that even with the advances in refining technologies and increasing

awareness and sensitivity to environmental needs, oil refineries continuously contaminate the earth's environment, namely air, water and soil. The massive expenditure of resources to clean up such refinery sites such as the one in Martinez, California are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. The amount of pollution damage that is done to the earth's natural resources is directly related to the amount of fossil fuels requiring processing for use in such application as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska. Over ten years later the long term effects of the worst environmental disaster in the history of the United States is still being felt. Most of the species, which were devastated due to the spillage of toxic petroleum products in a fragile environment have still not recovered and the once pristine beaches of the Alaskan coastline are still fouled with petroleum sludge. It still remains to be seen if the ecosystem and the local economy there will ever be able to fully recover from such a disaster.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum products and the burning of fossil fuels in internal combustion engines. The resulting emissions from even the most technologically advanced internal combustion engines contribute to air pollution, acid rain and the subsequent degradation of soil and water quality.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting, either directly or indirectly, from the use of internal combustion engines, most states are requiring more stringent requirements for air emission from automobiles and California has gone so far as to mandate fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine of powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a new and improved refuelable electrochemical power source, which would allow vehicles and other devices such as generators to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore, while employing this device, rather than routinely refueling with petroleum products, the battery used to power vehicles or generators, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine.

7. Gasoline-powered generators as well could be replaced by electrically-powered generators incorporating the subject invention. The result is that less gasoline would be consumed, and the harmful effects on the environment of consuming gasoline would be lessened.

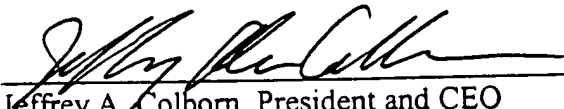
8. Finally, the bottom line is that this device greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal

combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Assignee Metallic Power respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: March 6, 2000



Jeffrey A. Colborn, President and CEO
Metallic Power, Inc.



04813-0008-00US00

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER OF
PATENTS AND TRADEMARKS
Washington, D.C. 20231

MAILED: OCT - 2

Page No.: 5
APP

In re application of
Martin Pinto
Stuart Smedley
Jeffrey Colborn
James Evans

Serial No.: 09/573,438
Filed: May 16, 2000
For: ELECTROLYZER AND METHOD
OF USING THE SAME

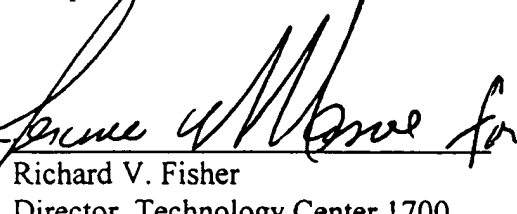
DECISION ON PETITION
TO MAKE SPECIAL
UNDER M.P.E.P. 708.02 V



This is a decision on the petition filed on August 14, 2000, requesting that the above identified application be granted Special Status under Sections 37 C.F.R. 1.102 and M.P.E.P 708.02 V.

The petition has been considered and found to comply with the requirements set forth under the above noted section.

The petition is **GRANTED**.


Richard V. Fisher
Director, Technology Center 1700
Chemical and Materials Engineering

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HOWREYSIMONARNOLD&WHITE

OCT 5 - 2000

WASHINGTON, D.C.

Howrey Simon Arnold & White LLP
Box 34
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

HL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Martin Pinto, et al.

Application No.: 09/573,438

Filed: May 16, 2000

For: **ELECTROLYZER AND METHOD OF
USING THE SAME**

Art Unit: 1745

Examiner:



PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

This is a Petition to Make Special the above-identified patent application under 37 C.F.R. §1.102(c). The grounds and condition for granting this application special status are found in MPEP §702.02 V. entitled " ENVIRONMENTAL QUALITY," and 37 C.F.R. §1.102(c).

There is no Petition fee required pursuant to 37 C.F.R. §1.102(c) and/or MPEP §708.02, and therefore no payment is enclosed herewith.

As provided for in MPEP §708.02 V., Applicant believes that the invention, which is the subject of the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil. In support of this Petition, Applicant submits the Declaration of Jeffrey A. Colborn, the authorized representative of the Assignee of the subject application, referring to:

(A) How and why the use of less fossil fuels contributes to and positively influences the quality of the earth's environment;

(B) The potential contribution to the well-being of the environment, the maintenance of the natural elements and the prevention of further damage to these life-sustaining elements, namely, the earth's air, water and soil, connected to the present invention;


(C) The projected relative figures of fossil fuel savings, in particular oil, and how using less oil for a given application and extending the useful life of a unit volume of oil in use in an industrial machine lubrication setting or for the lubrication of an internal combustion engine, enhances the preservation and restoration of the earth's environment; and

(D) Why and how the Refuelable Electrochemical Power Source which is the subject of the instant patent application substantially decreases requirements for larger volumes of oil production and usage and why this materially enhances the quality of the environment.

Accordingly, Applicant requests that this Petition to Make Special be granted and that the application undergo accelerated examination.

HOWREY SIMON ARNOLD & WHITE, LLP

Date: August 9, 2000


Robert C. Laurensen
Reg. No. 34,206

HOWREY SIMON ARNOLD & WHITE, LLP
Box No. 34
1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402
Fax No. (202) 624-8925
(858) 622-5100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Martin Pinto, et al.

Application No.: 09/573,438

Filed: May 16, 2000

For: **ELECTROLYZER AND METHOD OF
USING THE SAME**

Art Unit: 1745

Examiner:



**DECLARATION OF ASSIGNEE IN SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)**

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Jeffrey A. Colborn, am Chairman and CEO of Metallic Power, Inc., the Assignee of the above-captioned patent application. In my capacity as Chairman/CEO of Metallic Power, I declare that the invention claimed in the above-captioned patent application materially enhances the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and do hereby swear upon information and belief the following:

1. The decreased use of petroleum products and fossil fuels would positively influence the quality of the earth's environment because less oil and natural gas would have to be taken from the earth, transported, refined and subsequently disposed of in an environmentally conscious manner. It is a well-known fact that even with the advances in refining technologies and increasing awareness and sensitivity to environmental needs, oil refineries continuously

contaminate the earth's environment, namely air, water and soil. The massive recent expenditures of resources to clean up such refinery sites are testimony to the unfortunate, unpredictable and inevitable environmental damage to air, water and soil due to the refinement of fossil fuels. In addition, unforeseen environmental disasters in refining and storage of petroleum products may be seen on a regular basis in such places as Kobe, Japan during times of natural catastrophes. Accidents during the transportation of fossil fuels, such as the damage or sinking of a supertanker, can cause environmental disasters. The amount of pollution damage that is done to the earth's natural environment is directly related to the amount of fossil fuels requiring processing for use in such application as internal combustion engines.

2. Oil refinement and the production and burning of fossil fuels is today one of the most serious potential sources of environmental damage. The decreased usage of oil would affect the amount of oil that would need to be taken from environmentally sensitive areas such as the Alaskan tundra. The decreased usage of oil and fossil fuels would mean that less oil needs to be transported, and thus, decreasing the potential for environmental disasters such as the wreckage of the oil freighter Exxon Valdez in Prince Albert Sound, Alaska.

3. In addition to the pollution caused by the extraction, transportation and refinement of petroleum products, environmental damage may also be caused due to the use of petroleum products and the burning of fossil fuels in internal combustion engines and power plants. The resulting emissions from even the most technologically advanced internal combustion engines are by far the largest source of air pollution today. Coal-fired power plants are the world's largest source of acid rain and sulfur oxides emissions, which cause significant environmental damage and negative health effects.

4. Leaking storage tanks and evaporation during pumping operations at retail sites for petroleum products and fossil fuels meant for internal combustion engines are well-documented sources of ground water, soil and air pollution. Even with the advent of double-walled tanks for use at such facilities for the storage of fossil fuels, containment has often failed.

5. As a reaction to the pollution resulting, either directly or indirectly, from the use of internal combustion engines, most states are requiring more stringent requirements for air emission from automobiles and California has gone so far as to mandate fully 10% of all vehicles within the state must be alternative power vehicles (such as electric cars) by the year 2003. In order to answer the call for a more environmentally responsible vehicle, most major car manufacturers are feverishly working toward construction of viable alternatives to the internal combustion engine of powering vehicles. It is becoming clear from recent drastic and catastrophic changes in global weather patterns most likely resulting from fossil fuel pollutants that the development of alternative power vehicles should be expedited.

6. The present invention relates to a new and improved refuelable electrochemical power source, which would allow vehicles and other devices such as generators to operate on electrical power rather than an internal combustion engine burning fossil fuels. In the same way, industrial machine tools could also be operated without the necessity for consumption of petroleum products. Therefore, while employing this device in vehicles, rather than routinely refueling with petroleum products, the battery used to power vehicles or generators, may be recharged quickly, efficiently, and economically, and thus provides a viable alternative to the internal combustion engine. Also, use of this power source in businesses and homes can significantly contribute to meeting the rapidly growing power needs of the United States and other countries without a corresponding increase of electrical generation, transmission, and distribution infrastructure. This is of great environmental importance because the construction of new powerplants and high-voltage transmission lines can impact the environment significantly, as is reflected in the long permitting processes for these facilities and the extensive environmental impact reports that are required before permits are considered.

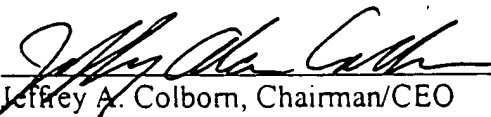
7. Gasoline-powered generators as well could be replaced by electrically-powered generators incorporating the subject invention. The result is that less gasoline would be consumed, and the harmful effects on the environment of consuming gasoline would be lessened.

8. Finally, this device greatly reduces the amount of oil used by eliminating the need for petroleum products and fossil fuels currently used to power internal combustion engines. Less oil used means less oil extracted, which means less crude oil transported, refined, and transported again to the user. Less oil used also equates to less spent oil dumped into water and soil. Less oil used, means less oil related pollution generation. Therefore, less oil related pollution generation materially enhances the quality of the environment.

Accordingly, Assignee Metallic Power, respectfully requests that the Petition to Make Special be granted and that the present application undergo accelerated examination.

The undersigned hereby further declares that the foregoing statements made by him of his own knowledge are true, and that all statements made by him on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: June 6, 2000



Jeffrey A. Colborn, Chairman/CEO
Metallic Power, Inc.



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
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JUN 14 2001

Paper No. 8

Robert C. Laurenson
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1299 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2402

WASHINGTON, D.C.

JUN - 8 2001



In re Application of: Jeffrey A. Colborn
Application No.: 09/627,742
Filed: July 28, 2000
For: SYSTEM AND METHOD FOR
POWER MANAGEMENT

DECISION ON PETITION
TO MAKE SPECIAL

This is a decision on the request for reconsideration, filed May 18, 2001 on the petition filed October 3, 2000 under 37 C.F.R. §102(c) and M.P.E.P. § 708.02(V): Environmental Quality, to make the above-identified application special. The request for reconsideration also includes an assertion that this application meets the criteria to be made special under M.P.E.P. § 708.02(VI): Energy.

A grantable petition under 37 C.F.R. §1.102(c), and M.P.E.P. §708.02, Section (VI), must be accompanied by a showing that the application is for an invention which materially contributes to (A) the discovery or development of energy resources, or (B) the more efficient utilization and conservation of energy resources. Examples of inventions in category (A) would be developments in fossil fuels (natural gas, coal, and petroleum), nuclear energy, solar energy, etc. Category (B) would include inventions relating to the reduction of energy consumption in combustion systems, industrial equipment, household appliances etc. Such petitions should be accompanied by statements under 37 C.F.R. § 1.102 by the applicant, assignee, or an attorney/agent registered to practice before the Office explaining how the invention materially contributes to category (A) or (B) set forth above. No fee for such a petition is required. (See 37 C.F.R. §1.102(c) and M.P.E.P. §708.02(VI).)

Petitioner's submissions meet the criteria set out above with respect to M.P.E.P. §708.02(VI)(B), reduction of energy consumption. Accordingly, the petition is **GRANTED**.

The application file is being forwarded to the Examiner of Record for expedited examination.

DOCKETED ^{LS} 6/14/01

A handwritten signature in black ink, appearing to read 'Robert A. Weinhardt', is written over a horizontal line.

Robert A. Weinhardt
Special Program Examiner
Technology Center 2100
Computer Architecture, Software,
& Electronic Commerce
703-305-9780

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Jeffrey A. Colborn

Application No.: 09/627,742

Filed: July 28, 2000

For: **SYSTEM AND METHOD FOR
POWER MANAGEMENT**

Art Unit: 2764

Examiner:



**REQUEST FOR RECONSIDERATION OF DENIAL
OF PETITION TO MAKE SPECIAL**

Commissioner for Patents
Washington, D.C. 20231

Attention: Robert A. Weinhardt
Special Program Examiner
Technology Center 2100

Dear Sir:

INTRODUCTION

This is a Request for Reconsideration of the denial of the Petition to Make Special the above-identified patent application. This Request is based on the Supplemental Declaration of Jeffrey A. Colborn, the authorized representative of the Assignee, attached hereto as Exhibit A,

CERTIFICATE OF MAILING
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached hereto) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231.

May 14, 2001
Date of Deposit

Maritza O'Neill
Name of Person Mailing Paper


Signature of Person Mailing Paper

the petitions to make special and corresponding decisions thereon for Assignee's related applications, attached hereto as Exhibit B, and the grounds set forth in 37 C.F.R. §1.102(c) and MPEP 708.02 V. and VI(B).

The Request should be granted, and the application accorded special status, for three distinct reasons. First, as set forth in the Supplemental Declaration, the application meets the criteria of MPEP 708.02 V. Second, as also set forth in the Supplemental Declaration, the application meets the criteria of MPEP 708.02 VI(B). Third, a decision according the application special status is supported by the numerous decisions on petitions according special status to all of the related applications of the Assignee. These points are explained further as follows:

I. THE APPLICATION MEETS THE CRITERIA OF MPEP 708.02 V

As set forth in the attached Supplemental Declaration, the application meets the criteria of MPEP 708.02 V for at least the following reasons:

1. By replacing polluting diesel generators as backup power sources for buildings, the regenerative fuel cell system of the invention is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air. (Supp. Decla. ¶2).

2. By replacing diesel generators, the regenerative fuel cell system is also expected to eliminate the need for lubricating oil for diesel generators, and therefore materially enhance the quality of the environment by contributing to the restoration and maintenance of water. (Supp. Decla. ¶3).

3. By replacing lead/acid batteries, the regenerative fuel cell system is also expected to materially enhance the quality of the environment by reducing the damage to the earth caused by the mining of lead, thereby contributing to the restoration and maintenance of the soil. (Supp. Decla. ¶4).

4. By enabling solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses, the regenerative fuel cell system is expected to

materially enhance the quality of the environment by contributing to the restoration or maintenance of the air. (Supp. Decla. ¶¶5-6).

5. By increasing the efficiency of the power grid, the regenerative fuel cell system is expected to result in introduction of less pollutants into the air since less fossil fuel needs to be burned to provide the same power output. Consequently, the system is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air. (Supp. Decla. ¶¶7-10).

In the decision on the original petition, the Examiner stated that there was no showing that the system of the invention would in fact be adopted and replace traditional polluting systems. With this response, Applicant has shown that there is a substantial likelihood the system would in fact be adopted given that it is more efficient, less costly, and less polluting than available alternatives. (Supp. Decla. ¶¶2, 4, 5). Applicant believes this showing is sufficient to satisfy the required standard, and that absolute certainty is not necessary.

II. THE APPLICATION MEETS THE CRITERIA OF MPEP 708.02 VI(B)

A second independent basis for according the application special status is that it meets the criteria of MPEP 708.02 VI(B). As set forth in the attached Supplemental Declaration, the application meets these criteria for at least the following reasons:

1. The invention relates to a refuelable and regenerative fuel cell system in which a refuelable and regenerative fuel cell is interfaced to the power grid and to a energy controller in a home or business which controls one or more loads, e.g., elevators, lights, air conditioners, household appliances such as refrigerators, etc. During off-peak hours, when energy from the power grid is cheapest, the system may draw energy from the power grid in order to reprocess spent reaction solution and reaction products into metal fuel and fresh reaction solution. In addition, whenever energy is needed to drive the loads, the energy controller selectively draws energy from the regenerative fuel cell to drive the one or more loads in an energy efficient

manner. For example, the controller can automatically turn off lights and air conditioners during off-business hours and power them up again during business hours. The ability of the system to store energy in the form of the fuel allows the two processes --the process of reprocessing spent reaction products and the process of driving one or more loads--to be decoupled from one another, i.e., performed substantially independently of one another. (Supp. Decla. ¶7).

2. The system is expected to increase the efficiency of the power grid in terms of wattage out divided by quantity of fossil fuel burned. The reason is that the system, because of its capability to store energy in the form of electrochemical fuel, and to decouple the processes of reprocessing spent reaction products and driving loads, is expected to result in more frequent use of base load power plants and less frequent use of peaking plants to drive the power grid. Since base load plants are more efficient than peaking plants, e.g., 60 % vs. 35 %, the result is an overall increase in the efficiency of the power grid. (Supp. Decla. ¶8).

3. To explain why this is so, consider a scenario such as a hot day where the demand exceeds the supply for power from base load power plants. Currently, the response to this scenario will be to power up the less efficient peaking plants to fill the gap between demand and supply. However, with the regenerative fuel cell system, the response to this scenario is expected to be the use of the regenerative fuel cell to fill the gap between demand and supply. (Supp. Decla. ¶9).

4. The increased efficiency of the power grid means that the regenerative fuel cell system is expected to materially contribute to the reduction of energy consumption in combustion systems, industrial equipment, household appliances, etc. (Supp. Decla. ¶11).

III. A DECISION ACCORDING THE APPLICATION SPECIAL STATUS IS SUPPORTED BY THE NUMEROUS DECISIONS ACCORDING SPECIAL STATUS TO ASSIGNEE'S RELATED APPLICATIONS

A decision according the application special status is also supported by the decisions
----- according special status to all of Assignee's related applications. These related applications

consist of U.S.S.N. 09/353,422 (now U.S. Patent No. 6,162,555); 09/449,176 (now U.S. Patent No. 6,153,328); 09/521,392; and 09/573,438. The petitions and the decisions on the petitions for these related applications are attached hereto as Exhibit B.


CONCLUSION

For all the foregoing reasons, this request is proper in all respects, and should be granted.

Applicant believes that no fee is due in connection with this Request. However, if a fee is in fact due to prevent abandonment of the subject application, the Commissioner is authorized to charge the same to our Deposit Account No. 08-3038, referencing Docket No. 04813.0009.NPUS00.

HOWREY SIMON ARNOLD & WHITE, LLP

Date: May 14, 2000



Robert C. Laurenson
Reg. No. 34,206

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Jeffrey A. Colborn

Application No.: **09/627,742**

Filed: **July 28, 2000**

For: **SYSTEM AND METHOD FOR
POWER MANAGEMENT**

Art Unit: 2764

Examiner:



**SUPPLEMENTAL DECLARATION OF ASSIGNEE IN FURTHER SUPPORT OF
PETITION TO MAKE SPECIAL UNDER 37 C.F.R. §1.102(c)**

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

1. I, Jeffrey A. Colborn, am Chairman and CEO of Metallic Power, Inc., the Assignee of the above-captioned patent application. In my capacity as Chairman/CEO of Metallic Power, I believe that the invention claimed in the above-captioned patent application will (a) materially enhance the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements, namely air, water and soil, and (b) materially contribute to more efficient utilization and conservation of energy resources. The basis for my belief is as follows:

2. The invention relates to a refuelable and regenerative fuel cell, which is expected to replace diesel generators as backup power sources for buildings when used as a power management device as described in the invention. Diesel generators generate a substantial

amount of air pollution. This has motivated some cities, for example in California, to impose a moratorium on permits for diesel generators as backup power sources for buildings. This is particularly remarkable given that the California in general, and the Bay Area in particular, is experiencing rolling blackouts. Obviously, these cities are greatly concerned that the risk to the environment posed by a large number of these diesel generators coming on line at the same time, such as could occur if an area was subject to a rolling blackout, is serious and substantial. Given the serious disruption to a city caused by a rolling blackout, and the lack of other alternatives that are as attractive as regenerative fuel cells in terms of cost, efficiency and environmental impact, it stands to reason then that these cities would be highly motivated to deploy regenerative fuel cells as backup power sources in lieu of diesel generators. By replacing polluting diesel generators, the regenerative fuel cell is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air.

3. Diesel generators also consume quite a bit of lubricating oil given that they must have their oil changed quite often. The disposal of this oil can be extremely harmful to the environment as one quart of motor oil can render an entire reservoir unpalatable for drinking. By replacing diesel generators, the regenerative fuel cell is also expected to eliminate the need for this oil, and therefore materially enhance the quality of the environment by contributing to the restoration and maintenance of water.

4. The regenerative fuel cell is also expected to replace lead/acid batteries as a power source because of the ~~significant~~ environmental damage caused by the manufacture of lead/acid batteries, damage caused particularly by the mining, processing and recycling of lead, and the lack of any other alternatives as attractive as regenerative fuel cells. By replaoing lead/acid batteries, the regenerative fuel cell is also expected to materially enhance the quality of the environment by reducing the damage to the earth caused by the mining of lead, and contributing to the restoration and maintenance of the soil.

5. The regenerative fuel cell will also enable solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses. The reason is that regenerative fuel cells allow for the storage of energy in the form of metal fuel and fresh reaction solution or hydrogen, depending on the type of regenerative fuel cell. These fuels can be reprocessed from spent reaction products whenever the solar or wind power is available. Later, when power is needed for a house or business, this power can be provided by the regenerative fuel cell replenished by the reprocessed fuel and fresh reaction solution. Once enabled, solar/wind power is expected to replace power plants as the primary energy source for a substantial number of homes and businesses because it does not release pollutants into the air, is more efficient, and less costly.

6. Power plants function by converting energy released through the burning of fossil fuels into power. The burning of fossil fuels in turn releases a substantial amount of pollutants into the air. By enabling solar/wind power to replace power plants as the primary energy source for a substantial number of homes and businesses, the regenerative fuel cell is expected to materially enhance the quality of the environment by contributing to the restoration or maintenance of the air.

7. The invention also relates to a refuelable and regenerative fuel cell system in which a refuelable and regenerative fuel cell is interfaced to the power grid and to a energy controller in a home or business which controls one or more loads, e.g., elevators, lights, air conditioners, household appliances such as refrigerators, etc. During off-peak hours, when energy from the power grid is cheapest, the system may draw energy from the power grid in order to reprocess spent reaction solution and reaction products into metal fuel and fresh reaction solution. In addition, whenever energy is needed to drive the loads, the energy controller selectively draws energy from the regenerative fuel cell to drive the one or more loads in an energy efficient manner. For example, the controller can automatically turn off lights and air conditioners during off-business hours and power them up again during business hours. The ability of the system to

store energy in the form of the fuel allows the two processes --the process of reprocessing spent reaction products and the process of driving one or more loads--to be decoupled from one another, i.e., performed substantially independently of one another.

8. The system is expected to increase the efficiency of the power grid in terms of wattage out divided by quantity of fossil fuel burned. The reason is that the system, because of its capability to store energy in the form of electrochemical fuel, and to decouple the processes of reprocessing spent reaction products and driving loads, is expected to result in more frequent use of base load power plants and less frequent use of peaking plants to drive the power grid. Since base load plants are more efficient than peaking plants, e.g., 60 % vs. 35 %, the result is an overall increase in the efficiency of the power grid.

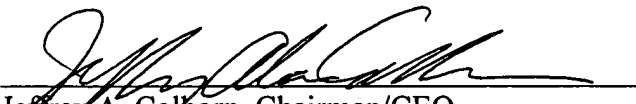
9. To explain why this is so, consider a scenario such as a hot day where the demand exceeds the supply for power from base load power plants. Currently, the response to this scenario will be to power up the less efficient peaking plants to fill the gap between demand and supply. However, with the regenerative fuel cell system, the response to this scenario is expected to be the use of the regenerative fuel cell to fill the gap between demand and supply.

10. The increased efficiency of the power grid resulting from use of the system is expected to translate into the introduction of less pollutants into the air since less fossil fuel needs to be burned to provide the same power output. Consequently, the system is expected to materially enhance the quality of the environment by contributing to the restoration and maintenance of the air.

11. The increased efficiency of the power grid also means that the regenerative fuel cell system is expected to materially contribute to the reduction of energy consumption in combustion systems, industrial equipment, household appliances, etc.

12. All statements made on the basis of personal knowledge are true, and all statements made on the basis of information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: May 14th, 2001



Jeffrey A. Colborn, Chairman/CEO
Metallic Power, Inc.